

Daniel Orlikowski

Curriculum Vitae

Office:

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Citizenship: US

Professional Experience:

- 07/01- Thermoelastic behavior of metals based on first-principles;
LLNL The dyncamic response of metals subjected to shocks;
- 05/00-06/01 Hydrogen embrittlement in fcc-metals using first principles techniques;
PostDoc. The effects of pre-existing cracks on the stress-strain relation
Harvard
- 05/96-05/00 AC and DC transport properties of carbon nanotube defects/
Ph.D. heterojunctions; simulated scanning tunneling microscopy CNT;
NCSU Adatoms, Addimers on Strained Carbon Nanotubes;
Large-scale, 2- and 3-D simulations of phase separation of elastically
coherent binary alloys systems with and without external strain; under the direction of
Dr. C. Roland at North Carolina State University(NCSU).
- 05/94 - 10/94 High Velocity Liquid Catastrophic Breakup Experiment under direction
during B.S. of Dr. J. Keith at Scientific Applications International Corp.(SAIC)

Education:

- 08/96 - 04/00 Ph.D. Major: Physics NCSU
Minor: Mathematics
- 08/95 - 08/96 Postbaccalaureate Physics NCSU
- 10/94 - 07/95 German Language Certificate Uni. of Heidelberg(Germany)
- 05/91 - 05/94 B.S. Major: Physics NCSU

Educational Honors:

- B.S. with Magna cum Laude, Honor's Program, Scholar's
Program, Dean's List

Teaching Experience:

- 08/95 - 05/99 Teaching Assistant/ Laboratory Instructor at NCSU
08/93 - 01/94

Research Interests:

- Mechanic Transformations; Electronic Quantum Transport; Phase Transitions;
Quantum Nanostructures; Computational Methods

List of Publications

1. G. Lu, D. Orlikowski, I. Park, O. Politano, and E. Kaxiras, Energetics of hydrogen impurities in aluminum and their effect on mechanical properties, *Phys. Rev. B* **65**, 064102 (2002).
2. D. Orlikowski, H. Mehrez, J. Taylor, H. Gao, J. Wang, and C. Roland, Resonant transmission through finite-sized carbon nanotubes, *Phys. Rev. B* **63**, 155412 (2001).
3. D. Orlikowski, C. Sagui, A. Somoza, and C. Roland, Large-scale simulations of phase separation in elastically coherent binary alloy systems with external strain, *Phys. Rev. B* **62**, 3160 (2000).
4. D. Orlikowski, M. Buongiorno Nardelli, J. Bernholc and C. Roland, Theoretical STM signatures and transport properties of native defects in carbon nanotubes, *Phys. Rev. B* **61** 14194 (2000).
5. D. Orlikowski, M. Buongiorno Nardelli, J. Bernholc and C. Roland Ad-dimers on strained carbon nanotubes: A new route for quantum dot formation? *Phys. Rev. Lett.* **83**, 4132 (1999).
6. J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, R. Roland and Q.Zhao, Mechanical Properties and Electronic Transport in Carbon Nanotubes, eds. D. Tomanek and R. J. Enbody, Kluwer Academic Publishing, in press (1999).
7. D. Orlikowski, C. Sagui, A. Somoza, and C. Roland, Large-scale simulations of phase separation of elastically coherent binary alloy systems, *Phys. Rev. B* **59**, 8646 (1999).
8. D. Orlikowski, C. Sagui, A. Somoza, and C. Roland, Three-Dimensional Simulations of Phase Separations in Model Binary Alloy Systems with Elasticity, *Mat. Res. Soc. Symp. Proc.* **481**, 255, (1998).
9. C. Sagui, D. Orlikowski, A. Somoza, and C. Roland, Three-Dimensional Simulations of Ostwald Ripening with Elastic Effects, *Phys. Rev. E* **58**, Rapid Communications 4092, (1998).

Congresses:

Invited Papers:

1. "Theoretical Studies of Carbon Nanotubes: Atomic Deformations and Quantum Transport," J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, V. Meunier, D. Orlikowski, C. Roland, and Q. Zhao, APS March Meeting, Seatle, Wa., 2001.
2. "Nanotube electronic and transport properties," J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland and Q. Zhao, IUVSTA 15th International Vacuum Congress, San Francisco, October 2001.
3. "Atomic transformations, strength, plasticity and electron transport in strained carbon nanotubes," J. Bernholc, M. Buongiorno Nardelli, D. Orlikowski, C. Roland and Q. Zhao, Workshop on Fiber Fracture, Palma de Mallorca, Spain, October 2000.

4. "Mechanical Properties of Carbon Nanotubes", M. Buongiorno Nardelli, D. Orlikowski, C. Roland, B. Yakobson and J. Bernholc, 9th International Workshop on Computational Condensed Matter Physics: Total Energy and Force Methods, Trieste, Italy, January 1999.
5. "Large-scale simulations and design of nanoscale materials and devices: structural, mechanical and electrical properties of nanotubes", J. Bernholc, E.L. Briggs, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, and C. Roland, Engineering Foundation Conference on Nanocomposite Materials: Design and Applications, Girdwood, Alaska, March 1999.
6. "Theoretical investigations of carbon nanotubes: Growth, Quantum Dots and STM Images", C. Roland, J. Bernholc, M. Buongiorno Nardelli and D. Orlikowski, 1999 Beijing Workshop on Transport and Mesoscopic Systems, Beijing, China, July 1999.
7. "Mechanical properties and transport in carbon nanotubes", J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland and Q. Zhao, International workshop on the science and applications of nanotubes," East Lansing, Michigan, July 1999.
8. "Mechanical properties of carbon nanotubes", M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland and J. Bernholc, Fullerenes 99, Castera Verduzan, France, August 1999.
9. "Atomic transformations and quantum transport in carbon nanotubes", J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland and Q. Zhao, Workshop on Nanotechnology in Carbon and Related Materials, Brighton, United Kingdom, September 1999.
10. "Atomic transformations and quantum transport in carbon nanotubes", J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland and Q. Zhao, MRS Fall Meeting, Boston, November 1999.

Contributed papers at Conferences:

1. "Atomic transformations, strength, plasticity and electron transport in strained carbon nanotubes," J. Bernholc, M. Buongiorno Nardelli, D. Orlikowski, C. Roland and Q. Zhao, in Fiber Fracture, ed. M. Elices, Elsevier Publishing (2000).
2. "Plastic behavior of carbon nanotubes with addimers," C. Roland, D. Orlikowski, M. Buongiorno Nardelli and J. Bernholc, APS Centennial Meeting, Atlanta, March 1999.
3. "Addimers on strained carbon nanotubes: a new route for quantum dot formation", D. Orlikowski, M. Buongiorno Nardelli, J. Bernholc and C. Roland, MRS Fall meeting, Boston, December 1999.
M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, C. Roland, Q. Zhao and J. Bernholc, "Mechanical properties, defects and electronic behavior of carbon nanotubes", Carbon, in press (1999).
4. "Phase separation and elastic fields: three dimensional simulations of a phase field model", D. Orlikowski, C. Sogui, A. Somoza, and C. Roland, MRS Fall meeting, Boston, December 1999.